The Canadian Entomologist.

VOL. XLIV. LONDON, JANUARY, 1912. No. 1

SYSTEMATIC NOTES ON NORTH AMERICAN TACHINIDÆ.*

BY JOHN D. TOTHILL, DIVISION OF ENTOMOLOGY, OTTAWA.

The following is the first of a series of articles on Tachinidæ which the writer hopes to publish in this journal from time to time. They will be of a strictly systematic nature and emphasis will be laid upon Canadian species. This present article contains a description of a new Canadian species of *Winthemia* together with a key for the separation of the North American species of the genus known at the present time ; it also contains suggestions for improvement at two difficult points in Mr. Coquillett's generally excellent key to the genera in his "Revision of the N. American Tachinidæ."

Winthemia Desv.

In the course of a study of the parasites of the Spruce Budworm (*Tortrix fumiferana* Clemens) in Canada by the Division of Entomology a new species of *Winthemia* was reared in considerable numbers. A description of this species, which is here named *W. fumiferanæ* after its host, together with a key for the separation of the North American species of the genus follows.

The genus *Winthemia* Desv. ("Essai sur les Myodaires," p. 173, 1830), is represented in North America by four known species. One of these, *W. quadripustulata* Fab., is an exceedingly variable species. The writer has examined the types of *W. obscura* Coq. and *W. antennalis* Coq. and there seems to be little doubt but that they are both good species. For the privilege of examining these types and for numerous other courtesies while at the United States National Museum the writer is indebted to the authorities of that institution and more particularly to Mr. Frederick Knab.

The four species may be separated as follows :—

1. With 3 sternopleural bristles ..... 2.
   With 2 sternopleural bristles 3

*Contributions from the Division of Entomology, Ottawa.

2. With 3 postsutural bristles, 3rd joint of antenna nearly 3 times as long as 2nd; arista thickened almost to middle.....*obscura* Coq.
With 4 postsutural bristles, 3rd joint of antenna 1¼ times as long as 2nd; arista thickened on basal ⅓ .....*fumiferanæ*, n. sp.

3. Palpi, scutellum and apex of abdomen black.....*antennalis* Coq.
Palpi, scutellum and apex of abdomen yellowish. *quadripustulata* Fab.

Winthemia fumiferanæ, n. sp.

Black species with palpi, scutellum and usually antennæ and sides of 2nd and 3rd segments of the abdomen yellowish; thorax, abdomen and legs lightly dusted with whitish pollen; 4 postsutural and 3 sternopleural bristles; hind legs ciliate. Length, 7–9 mm.

Head ¾ times as broad as long; front in male ⅓ width of eye, in female equal to width of eye; frontal vitta in female 1½ times width of parafrontal plate (measurements taken immediately anterior to ocellar triangle); parafacials at narrowest point ¼ as wide as facial plate at widest point; genæ 1/6 eye height; antennæ reaching to lowest ¼ of face, 3rd joint in both sexes 1¼ times length of 2nd; arista thickened on basal ⅓, 2nd joint 1½ times as long as broad. Colour of head except eyes whitish pollinose on black ground; frontal vitta black; frontalia, parafacialia, facial plate, occiput and genæ whitish pollinose on black ground; antennæ varying from black to yellowish in all its segments, palpi yellow. A strong pair of proclinate ocellar bristles in both sexes; females with two pair of, males without orbital bristles; frontal bristles to, or slightly beyond base of second antennal joint; parafacials with numerous fine black hairs on upper ⅔; bristles of facialia on lower ¼ only.

Thorax including the pleuræ light grey pollinose on a black ground, the pollen being somewhat irregularly distributed; scutellum blackish at base and yellowish at apex, the extent of yellowish area varying in different specimens. Four pairs of postsutural dorsocentral bristles (in one specimen only 3 pairs), 3 pairs of postacrostichals and three sternopleurals, the latter usually strong but the lower one absent on one side in one specimen; scutellum with three strong pairs of marginal, and a pair of cruciate apical and several weak discal bristles.

Legs black; coxæ and femora strongly, tibiæ and tarsi faintly, whitish pollinose; middle tibiæ with 2 or 3 bristles on front side near the middle;

hind tibiæ ciliate but with two longer bristles near the middle ; tarsal claws and pulvilli considerably longer in the male than in the female.

Wings hyaline, becoming somewhat fuscous toward base. Vein M_{1+3} with one to five bristles near base ; the medium cross vein quite distinctly S shaped ; there is no appendage at bend of R_{1+2} ; the anterior end of medium cross vein is situate at $\frac{1}{3}$ distance from the bend of R_{1+2} to radio medial cross vein.

Abdomen black and polished on the whole of first segment and on posterior margins of the other segments ; the narrow anterior margins of segments 2, 3 and 4 white pollinose ; the median fascia irregularly white pollinose on black ground ; sides of segments 2 and 3 sometimes yellowish. A pair of median marginal macrochætæ on segments 1 and 2, a row of very long marginals on segment 3 ; no discal bristles on segments 2 and 3 ; all the segments are thickly covered with rather long fine hairs, which, especially medially, are erect and not proclinate ; fourth segment covered on disc with fine bristles about $\frac{3}{4}$ length of marginal macrochætæ on segment 3.

Described from 18 males and 18 females bred in the Division from the Spruce Budworm (*Tortrix fumiferana* Clemens). The localities are as follows : Two males and one female from Maniwaki, Province of Quebec ; 16 males and 17 females from Duncans, British Columbia, Canada. The adults issued from both larvæ and pupæ, but principally the latter, of the host. Type female from Duncans, B.C , and 33 co-types deposited with Division of Entomology, Experimental Farms, Ottawa ; 2 co-types a male and female from Duncans, B. C., deposited in the United States National Museum, Washington, D. C.

Amobia distincta Towns., and *Senotainia trilineata* V. & W.

In a recent attempt by the writer to determine with the aid of Coquillett's "Revision" some Tachinids that have since proved to *Senotainia trilineata* V. & W., considerable difficulty was experienced in deciding whether the species was the above mentioned or *Amobia distincta* Towns.; moreover reference to the original description did not materially facilitate the determination. From an examination of a large series of both species in the United States National Museum it was found that they are abundantly distinct and that the generic separation is fully justified. The following is a table, which it is hoped may prove useful, of some of the more obvious differences between the two species :—

Amobia distincta Towns.	*Senotainia trilineata* V. & W.
1. Radiomedial cross vein far before tip of R_{2+3}.	1. Radiomedial cross vein at or close to tip of R_{2+3}.
2. Palpi black.	2. Palpi yellow.
3. Parafacials at narrowest point at least 1.5 times length of 3rd antennal joint.	3. Parafacials at narrowest point about equal to length of 3rd antennal joint.
4. The three black thoracic vittæ, broad and conspicuous.	4. The three or four black thoracic vittæ narrow and inconspicuous.
5. The abdominal markings (three rows of black triangles on yellowish gray ground) very distinct even without lens, especially in male.	5. The abdominal markings not all distinct.
6. Female with piercing ovipositor.	6. Female without piercing oviposter.

Tachinophyto variabilis Coq., and *floridensis* Towns.

Tachynophyto Towns., Trans. Amer. Ent. Soc., Vol. 19, p. 130, 1892, generic synonymy.

Pseudomyothria Towns., 1892, loc. cit.

Methypostena Towns., 1908, Tax of Musc. Flies.

Lixophaga Towns., 1908, Tax of Musc. Flies.

Hypostena of authors (non Meig).

The above synonymy is pointed out by Mr. D. W. Coquillett in his recent and valuable paper "The Type Species of North American Genera of Diptera," p. 611.

In the "Revision," page 62, key section No. 7, two species of the above genus are separated, namely, *variabilis* Coq., and *floridensis* Towns. The key reads as follows :—

"7. Third segment of abdomen pollinose on at least the basal two-thirds, the pollen yellowish, abdomen subopaque ; length, 4–9 mm ..... *variabilis* Coq.

"Third segment at most pollinose on the basal third, the pollen white, abdomen subshining ; length, 4–9 mm ... *floridensis* Towns."

The characters made use of are purely colorational and since the publication of Coquillett's valuable "Revision" larger series of the two species have been accumulated which clearly demonstrate that such

characters, at least in *variabilis*, are subject to great variation. A recent examination of the types and of the series both at the Gipsy Moth Parasite Laboratory and at the United States National Museum by the writer brings out two points, i.e., that the species are abundantly distinct and that the pollinosity on the third segment of the abdomen in *variabilis* varies all the way from the typical condition to the condition met with in typical *floridensis*. The following conspicuous structural differences will serve to separate the species :—

T. variabilis Coq.	*T. floridensis* Tn.
1. Third joint of antennæ 3.5 to 4 times length of 2nd.	1. Third joint of antennæ 2 to 2.5 times length of 2nd.
2. Costal spine very inconspicuous.	2. Costal spine strongly developed and very conspicuous.

(To be continued.)

NOTES ON THE PARASITIC HYMENOPTERA.

BY A. A. GIRAULT, BRISBANE, AUSTRALIA.

Superfamily Chalcidoidea.
Family Encyrtidæ.
Subfamily Encyrtinæ.
Tribe Arrhenophagini.
Genus *Rhopoideus* Howard.

1. *Rhopoideus fuscus*, new species.

Dr. C. Gordon Hewitt, Dominion Entomologist, Ottawa, Canada, has sent me among other things eight specimens of an Encyrtine bearing acute edentate mandibles, which agree well with the genus *Rhopoideus* Howard. This species, however, has but 9-jointed antennæ, counting a very short, almost imperceptible ring-joint; its antennal club is solid. Now Ashmead gives as a diagnostic character of the genus in question 10-jointed antennæ (the funicle 5-jointed, no ring-joint mentioned), which would imply at least a 2-jointed antennal club. The original description of *Rhopoideus* leaves one in doubt as to the total number of antennal joints, the only statement made concerning them being to the effect that the funicle is 5-jointed. Nevertheless, this Canadian species agrees so well with the generic description, even to the possible hosts, except in the antennæ, that we have reason to question Ashmead's statement concerning the latter. With this species the funicle is 5-jointed, the first three joints